

Exhibit 3

EXECUTIVE SUMMARY

Sam Schwartz Engineering, DPC (SSE) conducted a traffic impact study for the proposed University of Chicago Washington Park site for the Barack Obama Presidential Library (OPL). Existing and future conditions in the study area have been described, analyzed, and evaluated with respect to transportation operations and the impact of the proposed development.

The location of the Washington Park site is easy to access for visitors and staff. It is located approximately 0.75 miles from the Dan Ryan Expressway and is directly adjacent to the CTA Green Line station at Garfield.

The study analyzed the following major intersections within the proximity of the site:

- Garfield Boulevard/Wells Street
- Garfield Boulevard/Wentworth Avenue
- Garfield Boulevard/Martin Luther King Drive
- Garfield Boulevard/Ellsworth Drive/Morgan Drive
- 51st Street/Martin Luther King Drive/Ellsworth Drive

Garfield Boulevard, part of Chicago's system of historic boulevards, has a right of way of 200' and provides three travel lanes in both the eastbound and westbound directions. Peak hour parking regulations provide a forth lane in each direction. Garfield Boulevard has significant vehicular capacity between the site and the Dan Ryan Expressway. Traffic currently moves along Garfield Boulevard without much delay and the additional traffic generated by the OPL can be accommodated without adding significant delay to any of the study intersections. Overall, vehicles will be able to easily access the site and the OPL will not have a significant impact on the traffic operations in the neighborhoods.

The following details the recommendations for parking, access, and improvements to the safety and operations of multi-modal access.

- Access to visitor parking should be provided on Prairie Avenue and/or 54th Street. Access should be prohibited on Garfield Boulevard in order to create a direct pedestrian connection between the Garfield Green Line station and the site.
- Service access and secure access can be provided from Martin Luther King Drive or Ellsworth Drive.
- Minor traffic signal timing/phasing modifications should be implemented along Garfield Park, as appropriate, to provide optimal operations and to facilitate traffic to and from the OPL.
- Ellsworth Drive should be vacated, between Garfield Boulevard and 51st Street, and be considered as a secondary access for handicap parking, taxis, tour buses and service vehicles. Vacating Ellsworth Drive will not only potentially reduce the amount of asphalt within Washington Park, but it will also significantly improve the safety and operations of the

intersections of 51st Street/Martin Luther King Drive/Ellsworth Drive and Garfield Boulevard/Morgan Drive/Ellsworth Drive. Closing Ellsworth Drive at 51st Street/Martin Luther King Drive will necessitate a redesign of signals, striping and some curbs at that intersection. It is recommended that pedestrian facilities be updated in the redesign.

- A traffic signal and signalized and marked pedestrian crossings should be installed at the intersection of Garfield Boulevard/Morgan Drive/Ellsworth Drive to improve the safety for all users.
- It is estimated that the site will generate a peak parking demand of 404 parking spaces on the 30th highest visitor day of the year (typical design day). It is recommended that all parking be provided on the portion of the site located on the northwest corner of Garfield Boulevard and Martin Luther King Drive.
- There are a number of options to accommodate any overflow parking for special events and the highest visitor days, including the garages that serve the University of Chicago Medicine and the University of Chicago at Ellis Avenue. There is also a considerable amount of available on-street parking in the area.
- It is estimated that the site will generate a peak bus demand of 5 buses on the 30th most popular day (typical design day). Special programs and exhibits within the OPL can increase the demand for buses. It is recommended that buses be staged on Ellsworth Drive or on the portion of the site located on the northwest corner of Garfield Boulevard and Martin Luther King Drive.
- A staff member should be given the responsibility of coordinating all transportation, particularly for special events.
- There are plans to provide bus rapid transit on Garfield Boulevard. This would provide additional transit access for residents on the west side of the city and visitors arriving on the Red Line. It is recommended that bus shelters be provided for both the northbound and southbound stops at Garfield Boulevard for the #3 bus. Train arrival information should be provided at street level, and possibly within the Library entrance, for the Garfield Green Line station. The Garfield Green Line station should be renamed Garfield-Obama Library to make it easy for visitors to identify their stop.
- The streets within the park were originally designed to allow horse and buggies to easily traverse through them. This design provided excess space for modern vehicles, which has led to vehicles using these streets to speed through the park. The following are the recommended geometrics for each internal street:
 - Morgan Drive, between Rainey Drive and Payne Drive: Reduce lane width to 10.5 feet and parking lane on the east side to 8 feet. This would reduce the street by 15 feet in width and remove approximately 0.35 acres of asphalt.

- Payne Drive, between Rainey Drive and Morgan Drive: Reduce lane width to 10.5 feet and the parking lanes to 8 feet. This would reduce the street by 7 feet in width and remove approximately 0.08 acres of asphalt.
- Rainey Drive, between Payne Drive and Morgan Drive: Reduce lane width to 10.5 feet. This would reduce the street by 19 feet in width and remove approximately 0.35 acres of asphalt.
- A roundabout should be considered at the intersection of Morgan Drive/Rainey Drive and Payne Drive/Rainey Drive. Additional traffic calming measures, such as speed humps, chicanes, and signage should be installed within the park streets.
- Safe pedestrian crossings should be installed at Morgan Drive/Rainey Drive and Payne Drive/Rainey Drive if roundabouts are not installed. They may include underpasses, stop control, or speed tables, similar to other pedestrian crossings within the University of Chicago.
- The sidewalk on the north side of Garfield Boulevard, between Prairie Avenue and Martin Luther King Drive, should be widened to at least 18 feet.
- The sidewalk on the west side of Martin Luther King Drive should be widened to 18 feet.
- A 12-foot wide sidewalk should be provided on the east side of Martin Luther King Drive, between 51st Street and Garfield Boulevard.
- Consideration should be given to developing a streetscape for Martin Luther King Drive and removing the guard rail.
- The intersection of Garfield Boulevard and Martin Luther King Drive should be modified to provide more safety and priority for pedestrians.
- There is currently a cycle track on 55th Street, which allows for safe bicycle travel on 55th Street protected from vehicular traffic. An on-street bike lane connects this facility through Washington Park, requiring bicyclists to ride next to fast-moving traffic through the park. It is recommended that a shared use path be designated within Washington Park that connects the 55th Street cycle track to the OPL. This should connect to the future bicycle facility on Garfield Boulevard.

INTRODUCTION

Sam Schwartz Engineering, DPC (SSE) was retained by the University of Chicago to conduct a traffic impact study for the proposed Washington Park site for the Barack Obama Presidential Library (OPL). The Washington Park site location is illustrated on **Figure 1**.

The following report presents and documents SSE's methodology, data collection, analyses, and identifies improvements, as necessary, to mitigate impacts the development's traffic may have on the adjacent roadway network.

As proposed, the project consists of the construction of the library itself within Washington Park between Martin Luther King Drive and Ellsworth Drive, north of Garfield Avenue. Visitor parking will be provided on the west portion of the site, on the northwest corner of Martin Luther King Drive and Garfield Boulevard. Vehicular access to visitor parking can be provided via 54th Street and Martin Luther King Drive and/or Prairie Avenue and Garfield Boulevard. This study analyzes the more conservative scenario where primary access is via Martin Luther King Drive, which carries more traffic than Prairie Avenue.

Ellsworth Drive will be vacated and closed to through traffic. Vehicular access to the site will be provided by Ellsworth Drive at Garfield Boulevard. This access will be used for handicapped parking, visitor pick-up and drop-off by private vehicles and taxis, and tour bus pick-up and drop-off, and service vehicle access.

The purpose of this study is to fulfill the criteria for accessibility, circulation and parking set forth by the Barack Obama Foundation. The objectives of the study are as follows:

- Analyze the existing traffic, parking and multi-modal operations in the study area.
- Estimate the new traffic generated by the proposed Presidential Library.
- Analyze the future traffic, parking and multi-modal operations in the study area.
- Analyze the future site access and circulation.
- Provide mitigation strategies and recommendations related to traffic, parking and multi-modal operations, site access and circulations, as well as to the management of traffic during construction.

The study area, with the study intersections identified, is shown on **Figure 2**.



Not to Scale



Figure 1
Site Location Map

Sam
Schwartz
Engineering
D.P.C.



Not to Scale



Figure 2
Study Intersections Map

● = Study Intersection

EXISTING CONDITIONS

This section of the study provides a description of the Washington Park site, the adjacent land uses, a summary of the data collection process and an analysis of the existing transportation conditions.

Site Location

The eastern portion of the site, where the OPL would sit is owned by the Chicago Park District. Current use of the site is parkland and path, with no formal recreational uses. The Chicago Park District is home to many of the nation's and city's most popular museums and attractions, including the Museum of Science and Industry, the Field Museum, the Shedd Aquarium, the Adler Planetarium, the DuSable Museum and the Lincoln Park Zoo. The western portion of the site is currently owned by the Chicago Transit Authority (CTA) and the University of Chicago. Current uses include the CTA Garfield Green Line station, surface parking for the CTA station, a Citgo gas station, and empty lots, including a lot which was used for staging of vehicles and buses during the reconstruction of the Green Line station.

Proposed Presidential Library Use and Operation

The Barack Obama Presidential Library will serve as a repository of the historical documents related to Barack Obama, the 44th President of the United States of America. It will include exhibits, displays, and souvenir shops. The building footprint is estimated at approximately 200,000 square feet. The typical hours of operation are anticipated to be between 9:00 AM and 5:00 PM and it is expected to be closed on major holidays such as Thanksgiving, Christmas, and New Year's Day. An estimated 800,000 visitors will come to the OPL each year, of which, approximately 350,000 are expected to be from outside the Chicagoland area.

Area Land Use

The site is currently unoccupied and owned by the City of Chicago. To the west of the site is the CTA Garfield Green Line station. To the northwest and southwest are mainly vacant lots and residential land uses. To the east of the site is Washington Park, including sports fields and the DuSable Museum. East of Washington Park is the University of Chicago and Medical Center.

Existing Area Roadway System

Unless otherwise noted, all streets described below are under the jurisdiction of the Chicago Department of Transportation (CDOT). Roads are described in the study area from west to east, then from north to south.

Garfield Boulevard is a 6-lane 200-foot wide roadway, with eastbound and westbound lanes separated by an 80-foot median with grass and trees. Garfield Boulevard is part of Chicago's historic boulevard system. On-street parking exists on the north and south curbs and is restricted during peak hours, providing an additional travel lane during those times. At its signalized intersection with Wentworth/Dan Ryan northbound ramps, Garfield Boulevard provides four through lanes and one right-turn lane in the westbound direction, and three through lanes and two left-turn

lanes in the eastbound direction. At its signalized intersection with Wells Street/Dan Ryan southbound ramps, it provides three through lanes and two left-turn lanes in the westbound directions, and provides five through lanes and one right-turn lane in the eastbound direction. At its intersection with Martin Luther King Drive it provides three lanes in the eastbound direction, and three lanes and a left-turn lane in the westbound direction. At its intersection with Morgan Drive, it provides a left-turn lane and two right-turn lanes in the eastbound direction.

Martin Luther King Drive is a two-lane, 38-foot roadway. On-street parking is provided on the west side of the roadway. Bike lanes are provided in the northbound and southbound directions. North of 51st Street, it also provides a service drive on the each side of the roadway which provides two lanes of parking each. At its signalized intersection with Garfield Boulevard it provides one lane in the northbound direction, and two lanes in the southbound direction. At its intersection with 51st Street and Ellsworth Drive, it provides one wide lane in the northbound direction, and a left-turn lane, a through lane to Ellsworth and a shared through/right-turn lane in the southbound direction.

Ellsworth Drive is a two-lane, 46-foot roadway. Parking is provided. Buffered bike lanes are provided in the northbound and southbound directions. At its signalized intersection with Martin Luther King Drive, it provides a shared through/right-turn lane and a left-turn lane in the northbound direction. At its unsignalized intersection with Garfield Boulevard and Morgan Drive, it provides a shared through/right-turn lane with right-turn channelization.

51st Street is a two-lane, 38-foot roadway. On-street parking is provided on the north and south sides of the street. At its signalized intersection with Martin Luther King Drive & Ellsworth Drive, 51st Street provides a right-turn pocket, a through lane and a left-turn lane in the eastbound direction, and two lanes and a left-turn lane in the westbound direction.

Pedestrian/Bike Facilities

Numerous paths for pedestrian travel are provided within the park. Sidewalks are provided along all study roadways on both sides of the street with the following exceptions. No sidewalks are provided along Ellsworth Drive within Washington Park and no sidewalk is provided on the east side of Martin Luther King Drive along the park. No sidewalks are provided on the interior median of Garfield Boulevard. Crosswalks are not provided on the west side of Wentworth Avenue and the east side of Wells Street at Garfield Boulevard. A bike route is provided along Martin Luther King Drive, Morgan Drive, and Ellsworth Drive. A Divvy bikeshare docking station is provided at the Garfield Green Line station. This is currently the last bikeshare station going south and west. Additional stations to expand the service in 2015 are planned along Garfield and at the CTA Garfield Red Line station.

Existing Transit Service

The proposed site is well-served by public transportation. The Chicago Transit Authority (CTA) operates multiple existing bus routes adjacent to the proposed site, as listed below:

- #55 - Garfield
- #3 - MLK

- #15 - Jeffrey Local
- #59 - 59th / 61st

The Green Line Garfield station is just within and west of the site. The #55 bus route connects riders 0.75 miles to the Garfield Red Line station as well.

Existing Traffic Volumes

Existing traffic volumes were determined by manual traffic counts conducted in October 2014 during the weekday and Saturday midday peak periods (10:00 AM to 2:00 PM) at the following intersections:

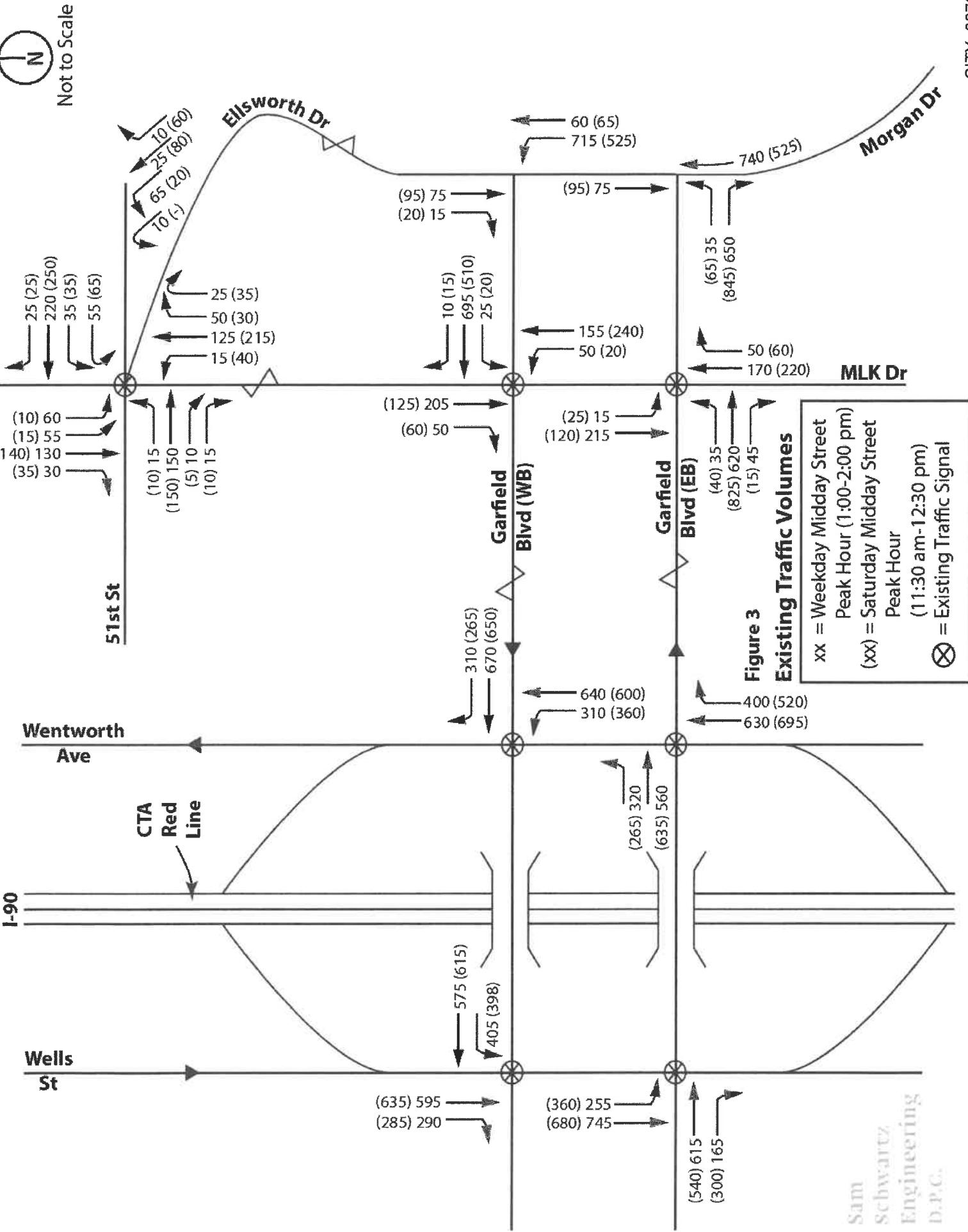
- Garfield Boulevard at Wentworth Avenue/Dan Ryan Expressway northbound ramps
- Garfield Boulevard at Wells Street/Dan Ryan southbound ramps
- Garfield Boulevard at Martin Luther King Drive
- Garfield Boulevard at Ellsworth Drive and Morgan Drive
- 51st Street at Martin Luther King Drive and Ellsworth Drive

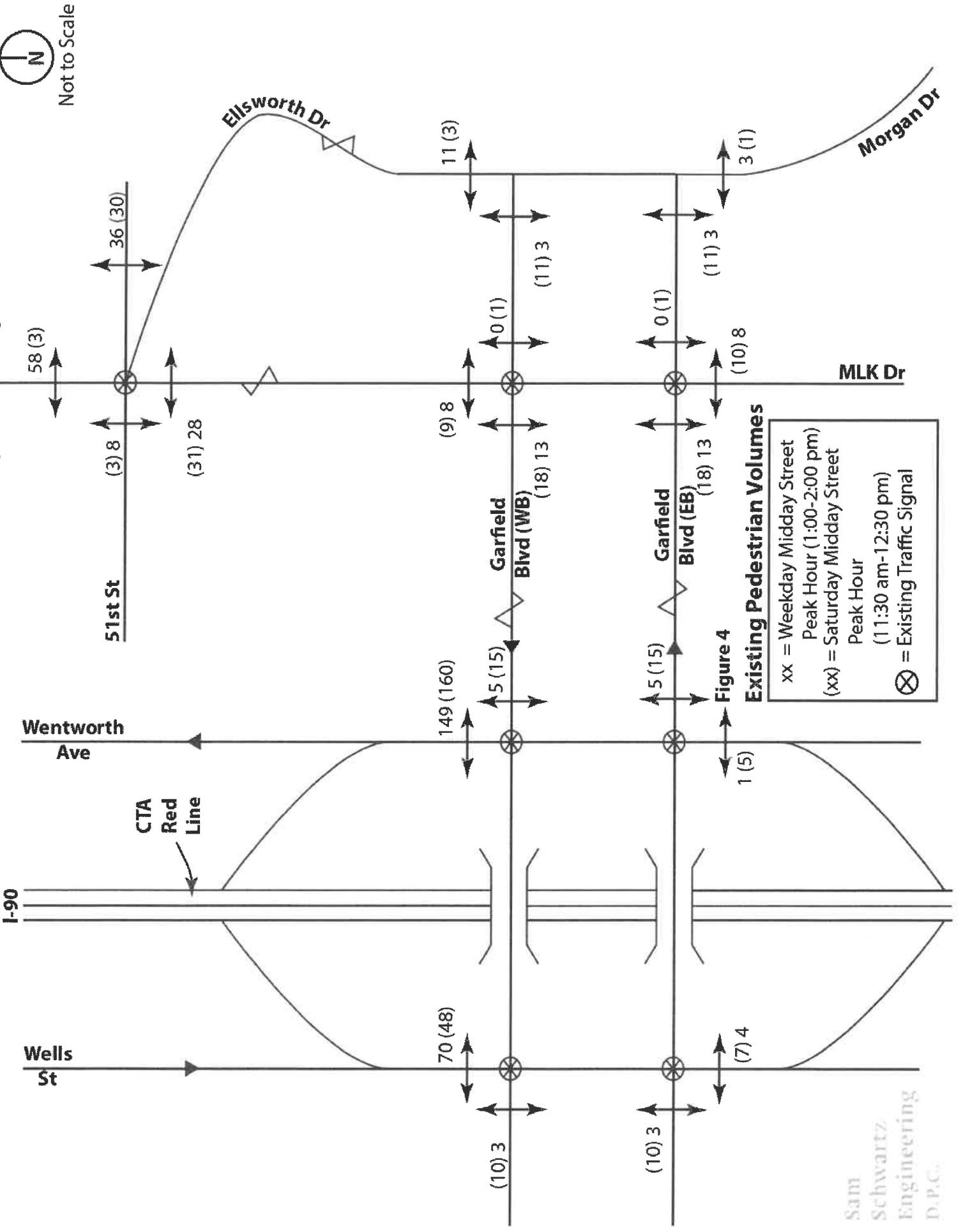
Intersection traffic counts include measuring the auto and bicycle traffic passing through each intersection as well as the number of pedestrians crossing each intersection approach in order to best represent existing operations at the study intersections. The weekday afternoon and Saturday peak periods were chosen since they coincide with the anticipated peak periods of the surrounding roadway system and the proposed development. The results indicate that the peak hour of existing traffic during the weekday midday peak occurred from 1:00 pm to 2:00 pm and the Saturday midday peak occurred from 11:30 am to 12:30 pm.

Based on traffic count data retrieved from the Illinois Department of Transportation website, the average daily traffic in the vicinity of the development is:

- 30,2000 vehicles on Garfield Boulevard, (year 2010)
- 8,700 vehicles on Martin Luther King Drive (year 2010)
- 2,800 vehicles on Indiana Avenue (year 2010)
- 3,500 vehicles on Michigan Avenue (year 2010)
- 3,020 vehicles on Morgan Drive (year 2010)
- 11,600 vehicles on Rainey Drive (year 2010)

The existing peak hour volumes are illustrated on **Figure 3**. **Figure 4** depicts the pedestrian volumes.





Existing Operations

The effectiveness of an intersection's operation is measured in terms of Level of Service (LOS), which is assigned a letter from A to F based on the average total delay experienced by each vehicle passing through an intersection. LOS A is the highest, representing the least delay, LOS E represents saturated or at-capacity conditions, and LOS F represents oversaturated conditions. The minimum intersection LOS that is generally accepted by industry standards is LOS D.

An intersection capacity analysis was performed for the study intersections for the weekday and Saturday peak hour using the methodologies outlined in the *Highway Capacity Manual (HCM)*¹, using Synchro software for the analysis. The existing timings at this intersection were obtained from the Chicago Department of Transportation. The results in **Table 1** show that all approaches at the study intersections operate at acceptable levels of services, at LOS C, or better.

Table 1: Existing Intersection Level-of-Service

Intersection/Peak Hour/Lane	Weekday Midday Peak Hour		Saturday Midday Peak Hour	
	Delay ^A	LOS ^B	Delay	LOS
Garfield EB at Wentworth Ave	7.5	A	7.9	A
	25.7	C	27.7	C
	17.3	B	19.3	B
	Overall Intersection			
Garfield WB at Wentworth Ave	23.9	C	22.5	C
	1.8	A	1.9	A
	13.0	B	11.9	B
	Overall Intersection			
Garfield EB at Wells Street	20.0	B	18.7	B
	2.2	A	2.2	A
	10.0	B	9.6	A
	Overall Intersection			
Garfield WB at Wells Street	7.6	A	7.8	A
	28.8	C	29.1	C
	17.7	B	18.0	B
	Overall Intersection			
Garfield EB at MLK Drive	17.9	B	20.1	C
	18.1	B	20.9	C
	6.5	A	8.1	A
	15.7	B	18.9	B
Garfield WB at MLK Drive	18.2	B	17.5	B
	6.6	A	5.8	A
	14.6	B	11.5	B
	15.4	B	13.3	B
MLK Drive at 51st Street/Ellsworth Drive	24.2	C	24.7	C
	24.2	C	25.2	C
	23.7	C	30.6	C
	31.1	C	33.5	C
	29.6	C	32.6	C
	26.3	C	28.8	C
	Overall Intersection			

^A Average control delay in seconds per vehicle.

^B Level of service.

¹Highway Capacity Manual, Transportation Research Board, National Research Council, Washington, D.C., 2010.

FUTURE TRAFFIC CHARACTERISTICS

This section of the report presents the traffic characteristics associated with the OPL Washington Park Site and evaluates the impact of future traffic on the area street system. This includes discussions regarding site development plans, site-generated traffic volumes and their distributions on the surrounding roadway network. Site access, site traffic assignment and future traffic volumes will also be discussed.

Traffic Growth

Construction and occupancy of the proposed OPL is currently expected to occur in seven years, by the year 2021. It is anticipated that this development would stimulate the redevelopment of Garfield Boulevard corridor. Accordingly, in order to account for the general traffic growth associated with new development in the surrounding area as the proposed development is constructed, SSE applied an annual, compounded growth rate of 2% to existing traffic volumes along Garfield Boulevard and 0.5% to the remaining study area roadways.

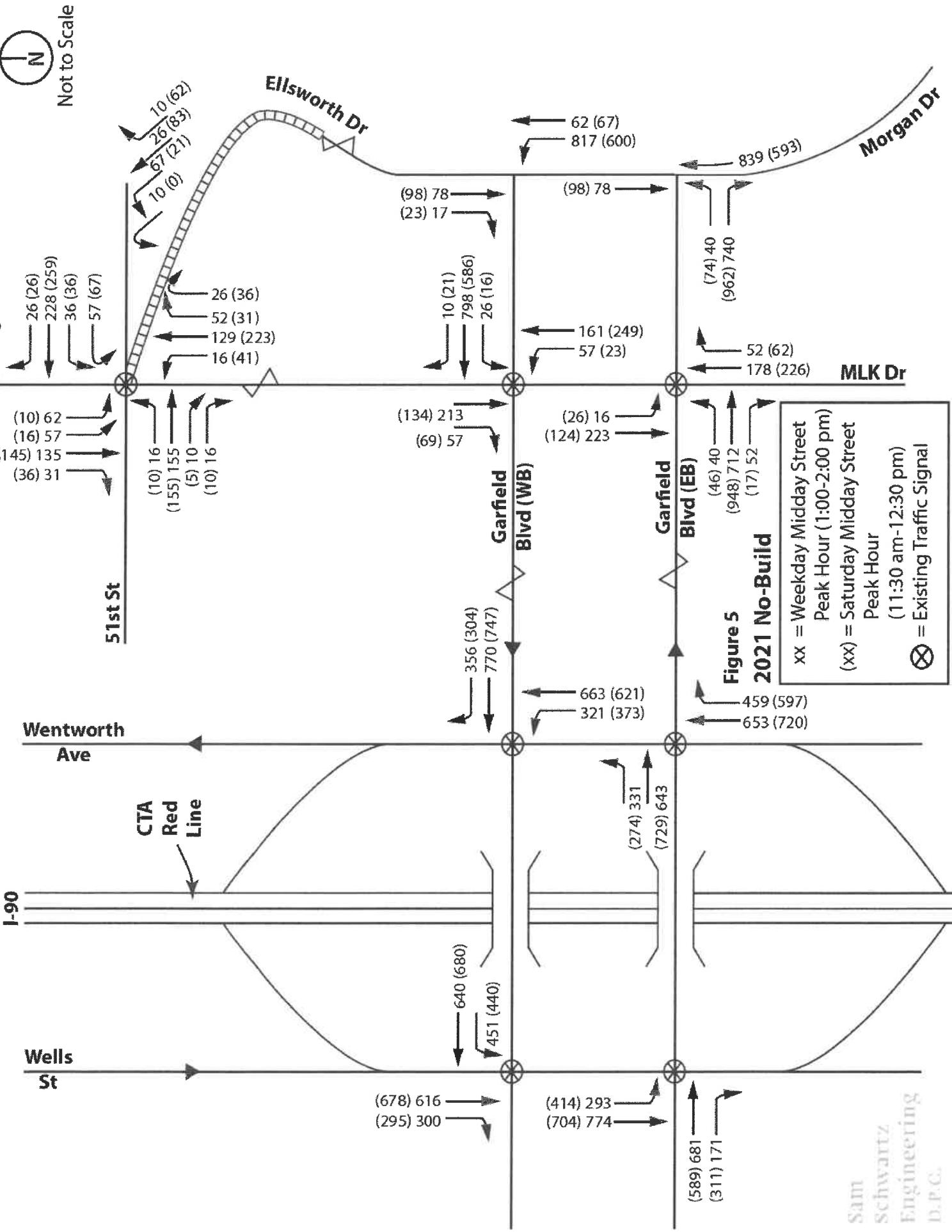
2021 No-Build Conditions (without Proposed Presidential Library)

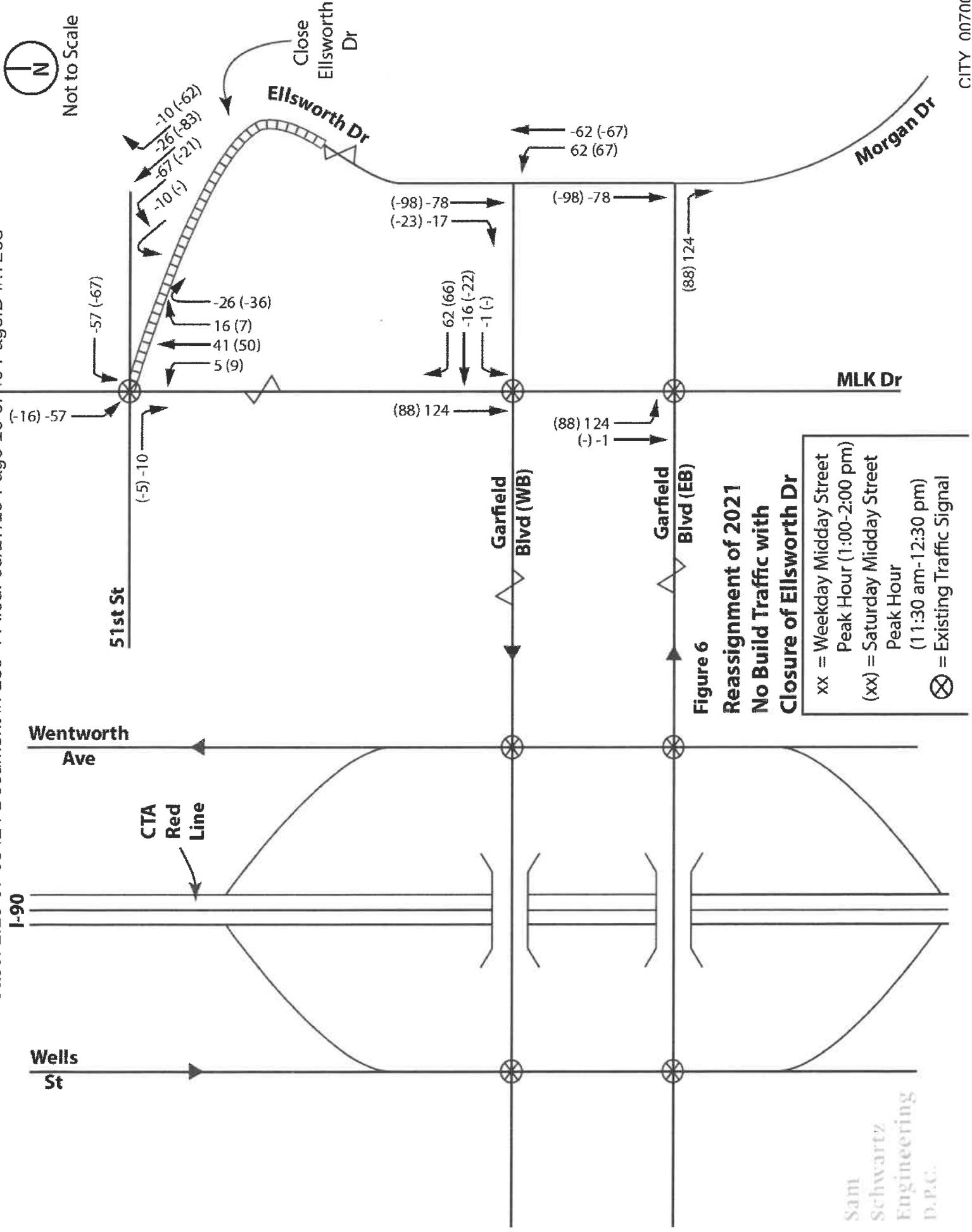
The 2021 No-Build peak hour traffic volumes were accordingly developed by applying the base 2.0 percent and 0.5 percent annual growth rate (approximately 1.14 and 1.04 percent over 7 years, respectively) on Garfield Boulevard and other roadways, respectively, to the existing traffic (Figure 3). The 2021 No-Build traffic-flow networks are graphically depicted on *Figure 5*.

Proposed Development Plan

The proposed development plan includes the construction of the Barack Obama Presidential Library. The building footprint is estimated at approximately 200,000 square feet. Its anticipated typical hours of operation are between 9:00 AM and 5:00 PM and closed on major holidays such as Thanksgiving, Christmas, and New Year's Day. It is estimated that 800,000 visitors will come to the OPL each year, of which, approximately 350,000 are expected to be from outside the Chicagoland area. It is anticipated to be served by a minimum of 404 vehicular parking spaces on site. It will provide a dedicated bus area for drop-off/pick-up operations and storage for a minimum of 5 buses.

The proposed development plan includes the vacation of Ellsworth Drive within Washington Park. Traffic currently using Ellsworth Drive will be rerouted. The re-assignment of 2021 No-Build traffic is graphically depicted on *Figure 6*.





Site Access

With the location of the OPL Washington Park site in close proximity to major roadways (Lake Shore Drive, Dan Ryan Expressway), as well as the University of Chicago Campus, Chicago's lakefront, other cultural attractions, and public transportation, OPL visitors will use a variety modes of transportation to access the site. All visitors arriving by automobile (personal or taxi) will enter and exit the site via the proposed access on Prairie Avenue, 54th Street, or Martin Luther King Drive. Buses associated with student or other organized groups are planned to pick-up/drop-off OPL visitors using a dedicated bus area to be located as close to the site as possible either within the site or curbside along Martin Luther King Drive.

Public transportation options such as the CTA Green Line, CTA Red Line, and CTA bus provide excellent access to the OPL Washington Park site. The CTA Garfield Green Line station is located adjacent to the site. CTA bus routes operate along Garfield Boulevard and Martin Luther King Drive.

Based on data from other museums in the City of Chicago, travel time data, and availability of public transportation to the OPL Washington Park site, the mode of transportation distribution assumed for visitors to and from the proposed site is summarized in **Table 2**.

Table 2: Mode of Transportation

Mode	Percentage
Car	50%
Walk	10%
Taxi	10%
Transit	20%
Tour / School Bus	9%
Bike	1%
Total	100%

Trip Generation

The amount of traffic generated by a development depends on the type and density of the land use being proposed. SSE estimated the trip generation for the proposed OPL based on visitor estimates provided by the University of Chicago, mode of transportation data in the site vicinity, and data from other museums in the City of Chicago and New York City.

SSE used the following assumptions to develop the trip generation for the OPL Washington Park site:

- 800,000 visitors
- Approximately 4,919 visitors would arrive on the 30th day (design day)
- Approximately 8,694 visitors would arrive on the peak day
- 50% of the visitors would travel by car

- 10% of the visitors would arrive by taxi
- 9% of the visitors would arrive via a tour / school bus
- The average automobile occupancy would be 2.56 persons per vehicle
- The average bus occupancy would be 41 persons
- The average visitor time would be 2.5 hours

Table 3 presents the estimated trip generation for the proposed OPL Washington Park site.

Table 3: Estimated Trip Generation

Vehicle	Weekday / Saturday Midday Peak Hour		
	In	Out	Total
Automobile (Car/Taxi)	208	202	410
Bus	2	2	4
Total Development	210	204	414

As shown in Table 3, during the weekday midday peak hour, the development is expected to generate approximately 414 new vehicle trips (210 entering and 204 exiting) during the 30th day peak hour.

Directional Distribution

The directional distribution of the site-generated traffic is a function of several variables, including the proposed land use, the adjacent roadway network and access, information from the University of Chicago, and engineering judgment. Accordingly, the anticipated origin and destination of the OPL visitors is summarized in **Table 4**.

Table 4: Visitor Origin / Destination

Origin / Destination	Percentage
North Side (Chicago)	8%
Near West Side (Chicago)	4%
Central (Chicago)	30%
South Side (Chicago)	8%
Other (Chicago)	15%
Outside Chicago City Limits	35%
Total	100%

The resulting expected directional distribution of site traffic for the proposed OPL Washington Park site is illustrated on **Figure 7**.

A circular icon with a horizontal line through the center, containing the letter 'N'.

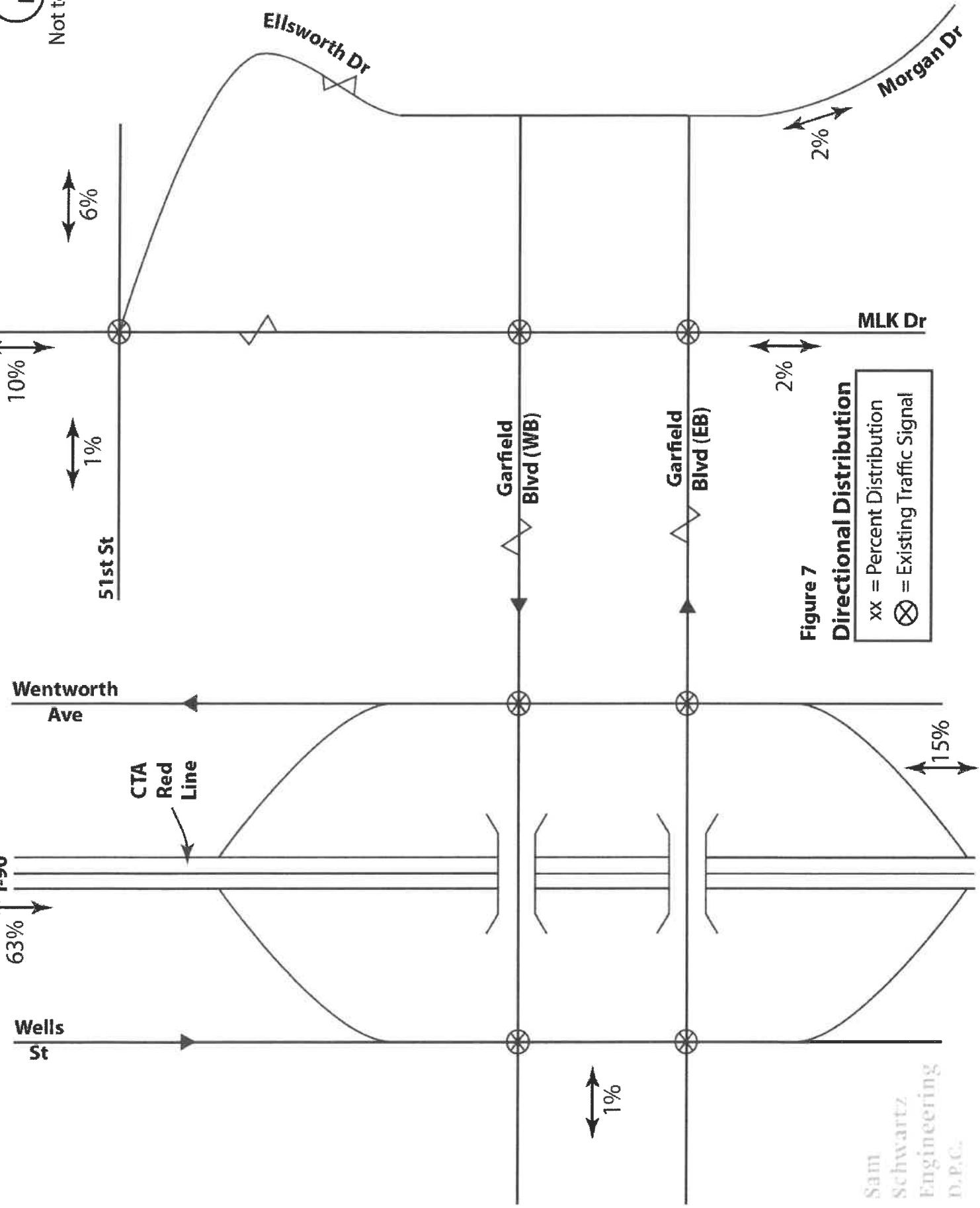


Figure 7
Directional Distribution
 xx = Percent Distribution
 \otimes = Existing Traffic Signal

Sam
Schwartz
Engineering
D.P.C.

Site Traffic Assignment

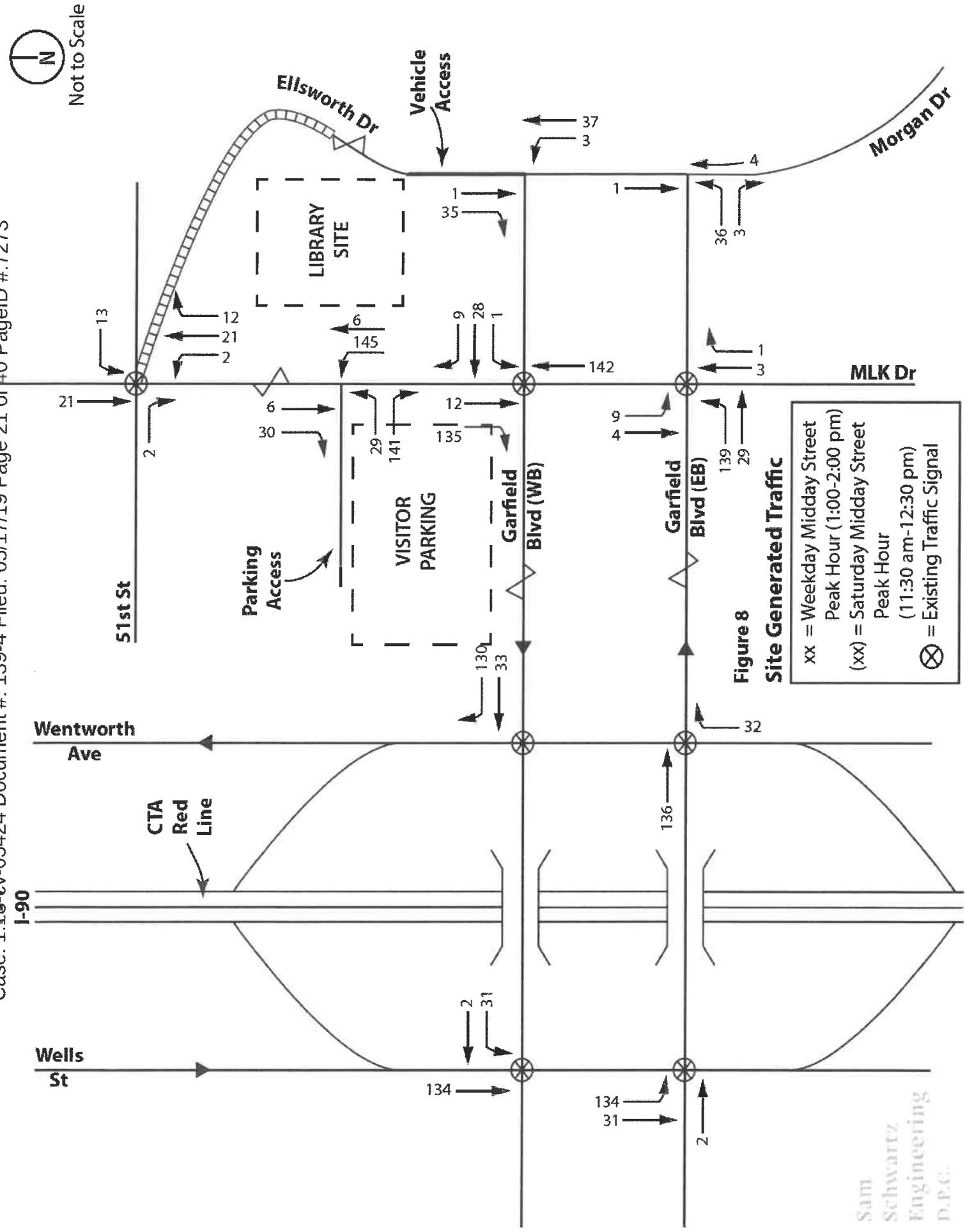
Based on the direction of travel, the site-generated trips were assigned to the roadway network by utilizing the site estimated trips listed in Table 4 and the anticipated directional distribution outlined on Figure 7. The site traffic assignment is illustrated on **Figure 8**.

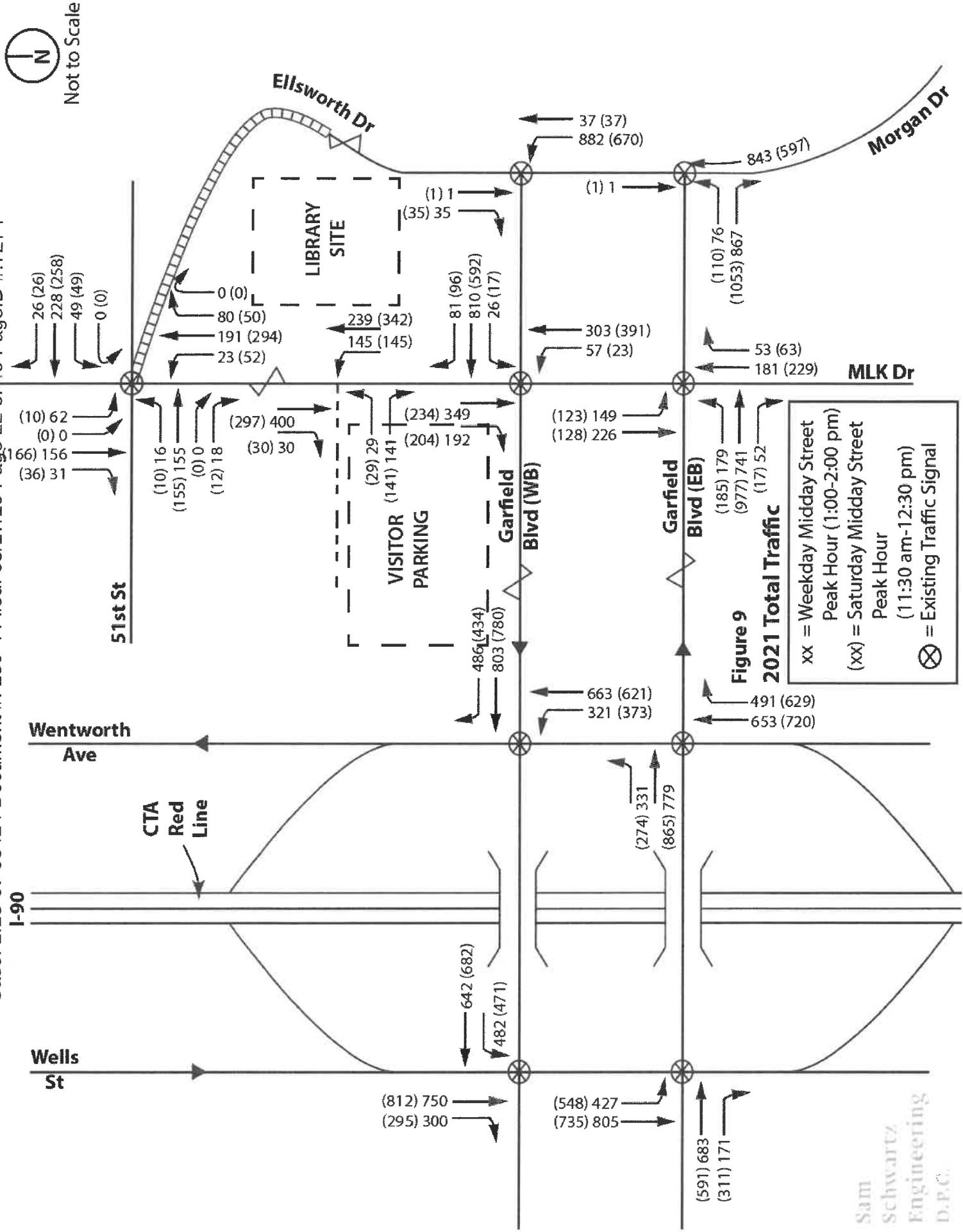
2021 Build Traffic Assignment (with Presidential Library, Washington Park site)

The site-generated traffic volumes (Figure 8) were then added to the 2021 No-Build traffic volumes (Figure 6) to develop the 2021 Build traffic volumes. The total traffic volumes for the year 2021 are shown on **Figure 9**.

Background Development (Master Plan) Traffic Growth

Traffic growth would also be associated with the expected land developments in the study area. However, there are no known background developments in the study area. There are no “vested” trips to include in this analysis.





TRAFFIC ANALYSIS

The following provides a discussion of the evaluation conducted of the weekday midday and Saturday midday peak hours to determine the impact of the proposed Barack Obama Presidential Library on the surrounding roadway system. These analyses include an examination of turn lane needs, traffic control improvements, functional capacity, parking demand, internal circulation, multi-modal assessment, and construction traffic management.

Capacity Analysis

Capacity analyses were conducted for assessing future traffic conditions of the weekday midday and Saturday midday peak hours, again using the methodologies outlined in the *Highway Capacity Manual*, using Synchro software. Summaries of the capacity analysis results indicating the LOS for all study intersections under future conditions are presented in **Table 5** and are discussed below.

Table 5: Future Level-of-Service Summary

Intersection/Peak Hour/Lane	2014 Existing		2021 Build (with Library)	
	Delay ^A	LOS ^B	Delay	LOS
Garfield EB at Wentworth Ave				
<i>Weekday Midday Peak Hour</i>				
LT EB approach	7.5	A	7.7	A
TR NB approach	25.7	C	26.8	C
Overall Intersection	17.3	B	17.4	B
<i>Saturday Midday Peak Hour</i>				
LT EB approach	7.9	A	9.2	A
TR NB approach	27.7	C	30.5	C
Overall Intersection	19.3	B	20.7	C
Garfield WB at Wentworth Ave				
<i>Weekday Midday Peak Hour</i>				
TR WB approach	23.9	C	49.8	D
LT NB approach	1.8	A	2.0	A
Overall Intersection	13.0	B	29.1	C
<i>Saturday Midday Peak Hour</i>				
TR WB approach	22.5	C	36.0	D
LT NB approach	1.9	A	2.1	A
Overall Intersection	11.9	B	20.8	C
Garfield EB at Wells Street				
<i>Weekday Midday Peak Hour</i>				
TR EB approach	20.0	B	20.8	C
LT SB approach	2.2	A	2.4	A
Overall Intersection	10.0	B	9.9	A
<i>Saturday Midday Peak Hour</i>				
TR EB approach	18.7	B	20.0	C
LT SB approach	2.2	A	2.9	A
Overall Intersection	9.6	A	10.0	A

Garfield WB at Wells Street				
<i>Weekday Midday Peak Hour</i>				
LT WB approach	7.6	A	7.7	A
TR SB approach	28.8	C	30.8	C
Overall Intersection	17.7	B	18.8	B
<i>Saturday Midday Peak Hour</i>				
LT WB approach	7.8	A	7.7	A
TR SB approach	29.1	C	31.6	C
Overall Intersection	18.0	B	19.4	B
Garfield EB at MLK Drive				
<i>Weekday Midday Peak Hour</i>				
LTR EB approach	17.9	B	21.7	C
TR NB approach	18.1	B	18.5	B
LT SB approach	6.5	A	6.8	A
Overall Intersection	15.7	B	17.7	B
<i>Saturday Midday Peak Hour</i>				
LTR EB approach	20.1	C	51.4	D
TR NB approach	20.9	C	21.3	C
LT SB approach	8.1	A	9.4	A
Overall Intersection	18.9	B	40.2	D
Garfield WB at MLK Drive				
<i>Weekday Midday Peak Hour</i>				
LTR WB approach	18.2	B	26.3	C
LT NB approach	6.6	A	23.6	C
TR SB approach	14.6	B	15.0	B
Overall Intersection	15.4	B	22.4	C
<i>Saturday Midday Peak Hour</i>				
LTR WB approach	17.5	B	24.2	C
LT NB approach	5.8	A	21.6	C
TR SB approach	11.5	B	10.7	B
Overall Intersection	13.3	B	19.7	B
MLK Drive at 51st Street/Ellsworth Drive				
<i>Weekday Midday Peak Hour</i>				
LTR EB approach	24.2	C	22.7	C
LTR WB approach	24.2	C	21.1	C
LTR NB approach	23.7	C	9.1	A
LTR SB approach	31.1	C	10.7	C
LTR NWB approach	29.6	C	-	-
Overall Intersection	26.3	C	15.5	B
<i>Saturday Midday Peak Hour</i>				
LTR EB approach	24.7	C	23.0	C
LTR WB approach	25.2	C	21.6	C
LTR NB approach	30.6	C	13.1	B
LTR SB approach	33.5	C	11.1	B
LTR NWB approach	32.6	C	-	-
Overall Intersection	28.8	C	16.8	B
Garfield EB at Morgan Drive				
<i>Weekday Midday Peak Hour</i>				
LR EB approach	-	-	11.4	B
TR SB approach	-	-	14.0	B
TR NW approach	-	-	0.5	A
Overall Intersection	-	-	6.3	A
<i>Saturday Midday Peak Hour</i>				
LR EB approach	-	-	12.4	B
TR SB approach	-	-	13.0	B
T NWB approach	-	-	0.3	A
Overall Intersection	-	-	8.3	A

Garfield WB at Ellsworth Drive				
<i>Weekday Midday Peak Hour</i>				
LR NB approach	-	-	8.4	A
TR SB approach	-	-	9.3	A
Overall Intersection	-	-	8.5	A
<i>Saturday Midday Peak Hour</i>				
LR NB approach	-	-	6.4	A
LTR SB approach	-	-	9.8	A
Overall Intersection	-	-	6.6	A

^a Average control delay in seconds per vehicle.

^b Level of service.

As shown in Table 5, approach and intersection LOS does not degrade below LOS D in the build condition. In the Saturday peak hour, the intersection of Garfield Boulevard eastbound and Martin Luther King Drive degrades from an LOS B to LOS D in the build condition, with the eastbound approach degrading from an LOS C to LOS D. The intersection LOS can be mitigated to an LOS C by shifting two seconds from the north-south clearance phase to the east-west phase, without degradation to the intersection LOS at the coupled intersection at Garfield Boulevard westbound and Martin Luther King Drive. Additionally, it is anticipated that a higher volume of pedestrians will be crossing Martin Luther King Drive at Garfield Boulevard from the Green Line station and the visitor parking. To accommodate this activity and provide greater safety to pedestrians, a three second leading pedestrian interval could be added in advance of the east-west vehicle phase, by removing time from the north-south phase, without degradation of intersection LOS below level of service C.

Intersection Recommendations

Pedestrian conditions at 54th Street and 53rd Street should be evaluated with the parking and OPL site layout. If the desired walking path to the museum crosses either of these intersections, pedestrian upgrades are recommended, including installing an all way stop at 54th Street, bumpouts on the west side of Martin Luther King Drive, and installation of international crosswalks.

It is recommended that the intersections of Garfield Boulevard and Ellsworth Drive and Morgan Drive be upgraded to a signalized intersection for the safety and convenience of all users at the intersection. This also creates a better pedestrian experience for park users. The intersection should have pedestrian signals and crosswalks.

The vacation of Ellsworth Drive will have geometric impacts to the existing intersection of 51st Street and Martin Luther King Drive. It will be necessary to redesign the signals, striping and curbs for this intersection. The conversion of this intersection to a 4-leg intersection from a 5-leg intersection will have significant safety advantages for all intersection users and will improve vehicle capacity.

Access Recommendations

Access to visitor parking should be provided on Prairie Avenue and/or 54th Street. Access should be prohibited on Garfield Boulevard in order to create a direct pedestrian connection between the Garfield Green Line station and the site.

Additional access must be provided for service vehicles and to provide secure access. This can be provided from either Martin Luther King Drive or the vacated Ellsworth Drive, depending on the final design of the building. A transportation security plan will be developed to ensure safe and secure travel for VIPs and to minimize the operations of area traffic.

Wayfinding Recommendations

Due to the expected amount of visitors from outside the Hyde Park neighborhood, a considerable amount of wayfinding should be provided. This includes signs on the Dan Ryan Expressway and Lake Shore Drive, and on local streets directing vehicles to parking. It should be very clear to drivers where they are going. It is suggested that any existing wayfinding signs on the Dan Ryan Expressway and Lake Shore Drive that identify the University of Chicago be modified to include the Library.

VEHICLE AND TOUR BUS PARKING ANALYSIS

Existing Parking Conditions

SSE conducted parking utilization counts on a typical weekday and weekend within the study area to understand the availability of on-street parking. The counts were conducted in the following study area:

- 51st Street, between Michigan Avenue and Martin Luther King Drive
- 53rd Street, between Michigan Avenue and Martin Luther King Drive
- 54th Street, between Indiana Avenue and Martin Luther King Drive
- Garfield Boulevard, between Michigan Avenue and Martin Luther King Drive
- 55th Place, between Indiana Avenue and Martin Luther King Drive
- 56th Street, between Michigan Avenue and Martin Luther King Drive
- 57th Street, between Michigan Avenue and Martin Luther King Drive
- 58th Street, between Michigan Avenue and Martin Luther King Drive
- 59th Street, between Michigan Avenue and Martin Luther King Drive
- 60th Street, between Michigan Avenue and Martin Luther King Drive
- 61st Street, between Michigan Avenue and Martin Luther King Drive
- 63rd Street, between Michigan Avenue and Martin Luther King Drive
- Michigan Avenue, between 51st Street and 63rd Street
- Indiana Avenue, between 51st Street and 63rd Street
- Prairie Avenue, between 51st Street and 63rd Street
- Calumet Avenue, between 51st Street and 63rd Street
- Martin Luther King Drive, between 51st Street and 63rd Street

All of the parking surveyed is free parking. There are approximately 3,725 on-street spaces in this overall area.

Based on the surveys conducted by SSE, the utilization of on-street parking in the study area on a weekday and Saturday is approximately 30%. There is a considerable amount of on-street parking available.

There are a number of off-street parking lots in the area of the site, including:

- University of Chicago Ellis Avenue Garage
- University of Chicago Medicine Main Garage
- Dyett High School

Estimated Parking Demand

In order to estimate the parking demand generated by the site, SSE gathered historical data from other museums in Chicago to understand the modal split and utilized daily and hourly distribution information from traffic studies conducted for the World Trade Center Memorial & Museum and the Chicago Children's Museum.

Parking is typically designed to accommodate the 30th most popular day of a facility and it is our recommendation that the OPL site be designed to accommodate this demand. Designing a parking facility for the peak day means that for 364 days of the year, there will be excess parking that is unused. Designing the parking at the Washington Park site to meet the demand of the 30th most popular day will ensure that visitors have an excellent experience accessing the site and that costs and land are used in the most efficient manner.

SSE used the following assumptions to develop the parking demand:

- 800,000 visitors
- Approximately 4,919 visitors would arrive on the 30th day (design day)
- Approximately 8,694 visitors would arrive on the peak day
- 50% of visitors would travel by car
- The average vehicle occupancy would be 2.5 persons per vehicle
- The average visitor time would be 2.5 hours

Table 6 displays the hourly parking demand for the site. As can be seen below, the peak hour of parking demand occurs between 11:00 AM and 12:00 PM. This would require 404 parking spaces for the design day and 713 parking spaces for the peak day.

Table 6
Parking Utilization Estimates

hr begin	% of visitors in facility	# of visitors		# of visitors in vehicles		# of vehicles	
		30th Day	Peak Day	30th Day	Peak Day	30th Day	Peak Day
9:00 AM	15%	738	1304	369	652	144	255
10:00 AM	35%	1722	3043	861	1522	336	595
11:00 AM	42%	2066	3651	1033	1826	404	713
12:00 PM	36%	1771	3130	886	1565	346	611
1:00 PM	37%	1820	3217	910	1609	355	629
2:00 PM	38%	1869	3304	935	1652	365	645
3:00 PM	28%	1377	2434	689	1217	269	475
4:00 PM	14%	689	1217	345	609	135	238
5:00 PM	4%	197	348	99	174	39	68

Parking Recommendations

It is recommended that the Washington Park site provide enough parking to meet the design day demand, which equates to 404 parking spaces. The parking should be located on the portion of the site on the northwest corner of Garfield Boulevard and Martin Luther King Drive.

There will be days when the parking demand exceeds supply provided by the on-site parking garage. This situation is common for many large generators of visitors, and there are a number of

different strategies to accommodate this overflow demand. As stated earlier, there are 3,725 on-street parking spaces within walking distance of the Library and there is very low utilization by the current residents. The University of Chicago will have three large parking structures, two at the University of Chicago Medicine and one at 5500 S. Ellis, within a five minute drive and a fifteen minute walk of the location that could be used to manage peak parking demands. There are a number of locations that can accommodate this additional demand, including the parking lots and structures on the University of Chicago campus and on-street parking. It is recommended that a staff member be given the responsibility of being the transportation coordinator and that person identify these peak days and either valet service or remote shuttles be provided so that visitors can park easily and access the Library.

It is recommended that 100 bicycle parking spaces be provided (1 bicycle space per 4 vehicle spaces) in a highly visible location that is convenient to the visitor access of the Library.

Estimated Tour Bus Demand and Recommendations

In order to estimate the tour bus demand generated by the site, SSE utilized the same data from the parking demand study.

SSE used the following assumptions to develop the parking demand:

- 800,000 visitors
- Approximately 4,919 visitors would arrive on the 30th day (design day)
- Approximately 8,694 visitors would arrive on the peak day
- 9% of visitors would travel by car
- The average bus occupancy would be 41 persons per vehicle
- The average visitor time would be 2.5 hours

This would require 5 bus parking spaces for the design day and 9 bus parking spaces for the peak day. It is recommended that buses drop-off and pick-up as close to the site as possible, either curbside or to the west of the Green Line station on-site. There is ample space on-street, both on Martin Luther King Drive and Garfield Boulevard, to accomplish this if it cannot be completed on the site itself.

MULTI-MODAL ASSESSMENT AND RECOMMENDATIONS

As discussed earlier, the Washington Park site has excellent transit access. It is located adjacent to the CTA Green Line, which connects to the Loop and all of the CTA rail lines, the Cermak Road corridor (McCormick Place and Chinatown) and the west side of Chicago. The CTA Red Line is located approximately 0.75 miles to the west of the site and two CTA routes (#3 and #55) run adjacent to the site. Sidewalks are provided on Garfield Boulevard and on the west side of Martin Luther King Drive. A cycle track is provided on 55th Street, to the east of Washington Park, and there are a number of shared use paths within Washington Park.

The following recommendations will enhance the multi-modal safety and connectivity for all users and make transit, walking, or biking to the site a much more attractive option, reducing the traffic impact on the adjacent neighborhoods.

Transit Connectivity and Operations

The Garfield Green Line station should be renamed Garfield-Obama Library to make it easy for visitors to identify their stop, similar to the Cermak-Chinatown, Sox-35th, and 35th-Bronzeville-IIT stations. Train arrival information should be provided at street level, and possibly within the Library entrance, for the Garfield Green Line station.

The bus and pedestrian connections should also be improved at the Green Line station. This includes larger and better bus stops and a traffic signal to allow pedestrians to cross the street with protection.

It is recommended that bus shelters be provided for both the northbound and southbound stops at Garfield Boulevard for the #3 bus and all bus shelters should be improved to provide arrival information.

There are plans to provide bus rapid transit on Garfield Boulevard. This would provide additional transit access for residents on the west side of the city and visitors arriving on the Red Line.

The existing Divvy bikeshare station at the Garfield Green Line station should be expanded and relocated to provide more convenient access to both the Library and the Green Line station.

A future Metra station is proposed on Garfield Boulevard for the Metra Rock Island Line. When constructed, it should be clearly named after the Library to make it easy for visitors to identify their stop. The design of the station should make transfers to the CTA bus seamless and also connect with the CTA Red Line.

Pedestrian Safety and Connectivity

It is likely that the amount of pedestrians in the area of the site will increase considerably with the OPL. To accommodate this increased demand, it is recommended that sidewalks around the site should be widened. The sidewalks on the north side of Garfield Boulevard, between Prairie Avenue

and Martin Luther King Drive, and on the west side of Martin Luther King Drive should be widened to at least 18 feet. A 12-foot wide sidewalk should be provided on the east side of Martin Luther King Drive, between 51st Street and Garfield Boulevard. Consideration should be given to developing a streetscape for Martin Luther King Drive and removing the guard rail.

The intersection of Garfield Boulevard and Martin Luther King Drive should be modified to provide safety and priority for pedestrians. This includes wider international crosswalks, reducing the turning radius on to Garfield Boulevard, narrowing the street crossing distance by providing bumpouts, and leading pedestrian intervals.

The streets within Washington Park were originally constructed to allow two horse and buggies to pass one another. With modern automobiles, these wide streets encourage vehicles to speed through the Park and make it difficult for pedestrians to access and traverse different parts of the park. A roundabout should be considered at the intersection of Morgan Drive/Rainey Drive and Payne Drive/Rainey Drive. Additional traffic calming measures, such as speed humps, chicanes, and signage should be installed within the park streets. Safe pedestrian crossings should be installed at Morgan Drive/Rainey Drive and Payne Drive/Rainey Drive if roundabouts are not installed. They may include underpasses, stop control, or speed tables, similar to other pedestrian crossings within the city of Chicago.

Bicycle Safety and Connectivity

The cycle track on 55th Street, east of Washington Park, allows for safe bicycle travel on 55th Street, protected from vehicular traffic. An on-street bike lane connects this facility through Washington Park, requiring bicyclists to ride next to vehicles speeding through the Park.

It is recommended that a shared use path be designated within Washington Park that connects the 55th Street cycle track to the OPL. A shared use path is a trail that is physically separated from vehicular traffic that can be used by pedestrians and bicyclists. This would allow for a safe connection between the 55th Street Cycle Track and the OPL. This path should connect to the future bicycle facility on Garfield Boulevard.

Signage should be provided to direct bicyclists to the park trail and the Library. The crossing at 55th Street/Payne Drive should be improved for bicyclists.

CONSTRUCTION TRAFFIC MANAGEMENT

There are no SRA routes within the project limits. Garfield Boulevard and Martin Luther King Drive should not be used for construction access. Ellsworth Drive should be closed during construction. The construction entrance to the sites should be provided on 54th Street or Ellsworth Drive. Construction employees should use Ellsworth Drive for parking.

CONCLUSION

Analyses have been conducted under existing and future conditions of the intersections in the study area to determine the impact from the proposed Barack Obama Presidential Library (OPL) Washington Park site. The capacity analysis results indicate that the implementation of geometric and signal improvements permits the surrounding roadways to operate at acceptable levels of service under all design hours to accommodate the increase in projected traffic due to the OPL, along with general traffic growth associated with new development in the surrounding area. Overall, vehicles will be able to easily access the site and the OPL will not have a significant impact on the traffic operations in the neighborhoods.

The following details the recommendations for parking, access, and improvements to the safety and operations of multi-modal access.

- Access to visitor parking should be provided on Prairie Avenue and/or 54th Street. Access should be prohibited on Garfield Boulevard in order to create a direct pedestrian connection between the Garfield Green Line Station and the site.
- Service access and secure access can be provided from Martin Luther King Drive or Ellsworth Drive.
- Minor traffic signal timing/phasing modifications should be implemented along Garfield Park, as appropriate, to provide optimal operations and to facilitate traffic to and from the OPL.
- Ellsworth Drive should be vacated, between Garfield Boulevard 51st Street, and be considered as a secondary access for handicap parking, taxis, tour buses and service vehicles. Vacating Ellsworth Drive will not only potentially reduce the amount of asphalt within Washington Park, but it will also significantly improve the safety and operations of the intersections of 51st Street/Martin Luther King Drive/Ellsworth Drive and Garfield Boulevard/Morgan Drive/Ellsworth Drive. Closing Ellsworth Drive at 51st St/Martin Luther King Drive would necessitate a redesign of signals, striping and some curbs at that intersection. It is recommended that pedestrian facilities be updated in the redesign.
- A traffic signal and signalized and marked pedestrian crossings should be installed at the intersection of Garfield Boulevard/Morgan Drive/Ellsworth Drive to improve the safety for all users.
- It is estimated that the site will generate a peak parking demand of 404 parking spaces on the 30th highest visitor day of the year (typical design day). It is recommended that all parking be provided on the portion of the site located on the northwest corner of Garfield Boulevard and Martin Luther King Drive.
- There are a number of options to accommodate any overflow parking for special events and the highest visitor days, including the garages that serve the University of Chicago Medicine

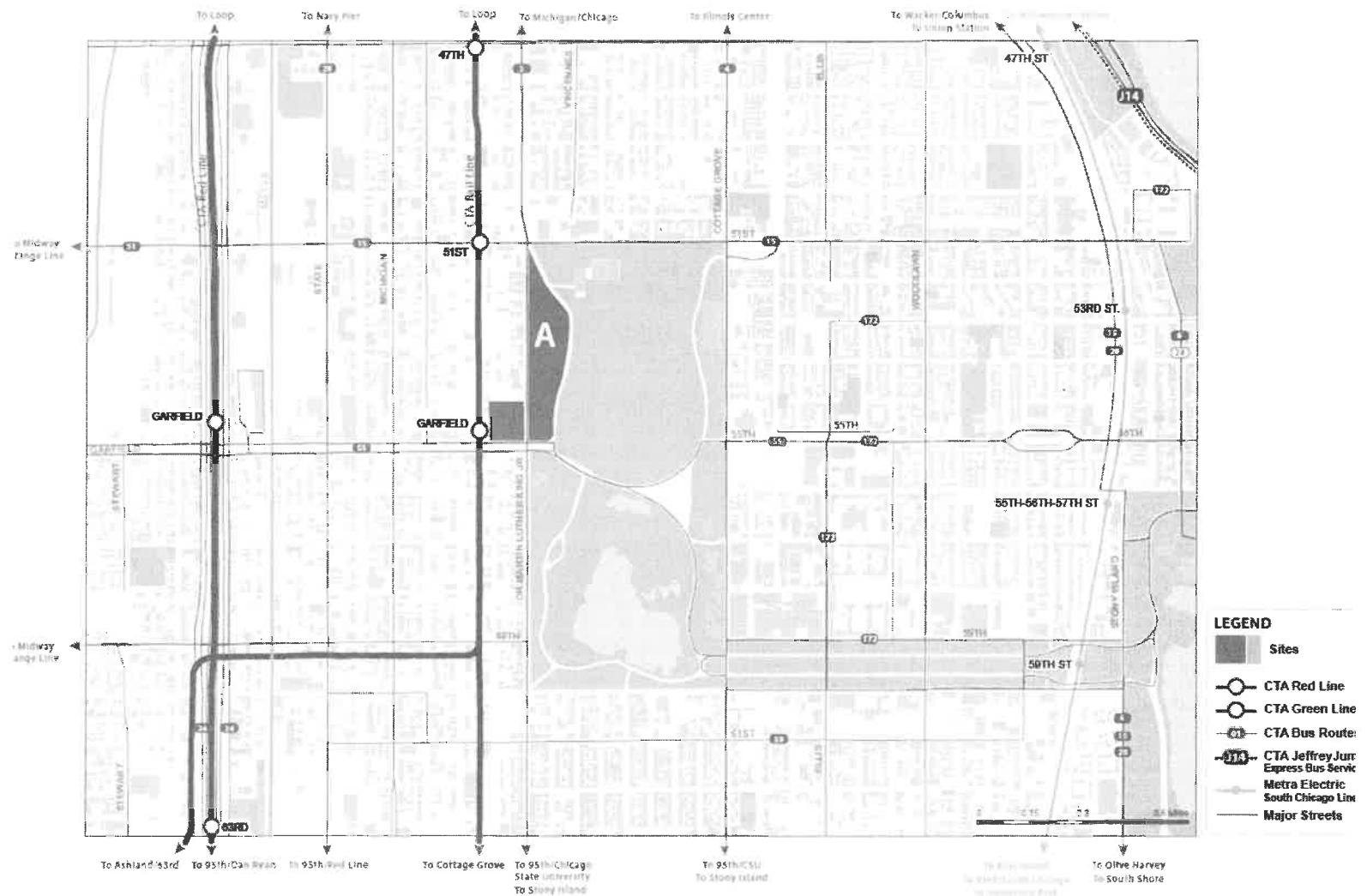
and the University of Chicago at Ellis Avenue. There is also a considerable amount of available on-street parking in the area.

- It is estimated that the site will generate a peak bus demand of 5 buses on the 30th most popular day (typical design day). Special programs and exhibits within the OPL can increase the demand for buses. It is recommended that buses be staged on Ellsworth Drive or on the portion of the site located on the northwest corner of Garfield Boulevard and Martin Luther King Drive.
- A staff member should be given the responsibility of coordinating all transportation, particularly for special events.
- There are plans to provide bus rapid transit on Garfield Boulevard. This would provide additional transit access for residents on the west side of the city and visitors arriving on the Red Line. It is recommended that bus shelter be provided for both the northbound and southbound stops at Garfield Boulevard for the #3 bus. Train arrival information should be provided at street level, and possibly within the Library entrance, for the Garfield Green Line station. The Garfield Green Line station should be renamed Garfield-Obama Library to make it easy for visitors to identify their stop.
- The streets within the park were originally designed to allow horse and buggies to easily traverse through them. This design provided excess space for modern vehicles, which has led to vehicles using these streets to speed through the park. The following are the recommended geometrics for each internal street:
 - Morgan Drive, between Rainey Drive and Payne Drive: Reduce lane width to 10.5 feet and parking lane on the east side to 8 feet. This would reduce the street by 15 feet in width and remove approximately 0.35 acres of asphalt.
 - Payne Drive, between Rainey Drive and Morgan Drive: Reduce lane width to 10.5 feet and the parking lanes to 8 feet. This would reduce the street by 7 feet in width and remove approximately 0.08 acres of asphalt.
 - Rainey Drive, between Payne Drive and Morgan Drive: Reduce lane width to 10.5 feet. This would reduce the street by 19 feet in width and remove approximately 0.35 acres of asphalt.
- A roundabout should be considered at the intersection of Morgan Drive/Rainey Drive and Payne Drive/Rainey Drive. Additional traffic calming measures, such as speed humps, chicanes, and signage should be installed within the Park streets.
- Safe pedestrian crossings should be installed at Morgan Drive/Rainey Drive and Payne Drive/Rainey Drive if roundabouts are not installed. They may include underpasses, stop control, or speed tables, similar to other pedestrian crossings within the University of Chicago.

- The sidewalk on the north side of Garfield Boulevard, between Prairie Avenue and Martin Luther King Drive, should be widened to at least 18 feet.
- The sidewalk on the west side of Martin Luther King Drive should be widened to 18 feet.
- A 12-foot wide sidewalk should be provided on the east side of Martin Luther King Drive, between 51st Street and Garfield Boulevard.
- Consideration should be given to developing a streetscape for Martin Luther King Drive and removing the guard rail.
- The intersection of Garfield Boulevard and Martin Luther King Drive should be modified to provide more safety and priority for pedestrians.
- There is currently a cycle track on 55th Street, which allows for safe bicycle travel on 55th Street protected from vehicular traffic. An on-street bike lane connects this facility through Washington Park, requiring bicyclists to ride next to vehicles speeding through the park. It is recommended that a shared use path be designated within Washington Park that connects the 55th Street cycle track to the OPL. This should connect to the future bicycle facility on Garfield Boulevard.

APPENDIX – MULTI-MODAL EXHIBITS

- Existing Transit
- Existing Bicycle Infrastructure
- Travel Times to Site
- Multi-modal Recommendations



CITY 007027

